EXPANDING BRACKETS

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1. Expand $2(x + 3)$
2. Expand $5(x - 4)$
3. Expand $-3(x + 7)$
4. Expand $4(2x - 5)$
5. Expand $-2(3x + 1)$
6. Expand $(x + 2)(x + 3)$
7. Expand $(x - 4)(x + 5)$
8. Expand $(2x + 1)(x - 3)$
9. Expand $(3x - 2)(2x + 5)$
10. Expand $(x + 4)^2$
11. Expand $(2x - 3)^2$
12. Expand $(x + 1)(x - 1)$
13. Expand $(3x + 2)(3x - 2)$
14. Expand $(x + 2)(x^2 + 3x + 1)$
15. Expand $(2x - 1)(x^2 - 3x + 4)$
16. Expand $3x(2y + 4)$
17. Expand $2x(3y - 5)$
18. Expand $4xy(2x + 3y)$
19. Expand $3xy(4x - 2y)$
20. Expand $2x^2y(3x + 4y)$
21. Expand $5xy^2(2x - 3y)$
22. Expand $3x^2y(4x^2 + 2y^2)$
23. Expand $2xy^3(5x^3 - 3y)$
24. Expand $4x^2y^2(3x^2 + 2y^2)$
25. Expand $3x^3y(2x^2y + 4xy^2)$
26. Expand $5x^2y^3(3x^3 - 2y^2)$
27. Expand $2x^4y(4x^2y^2 + 3xy^3)$
28. Expand $3x^3y^2(5x^2y^3 - 2x^4y)$
29. Expand $4x^2y^4(3x^3y^2 + 2x^2y^3)$
30. Expand $2x^5y^3(4x^3y^2 - 3x^2y^4)$

MASTER QUESTIONS

M1. A rectangle has length (3x + 2) and width (2x - 1). Find its area.

M2. A square has side length (4x + 3). Find its area.

M3. The volume of a cuboid is given by (2x + 1)(3x - 2)(x + 4). Expand this expression.

M4. A garden's length is (5x + 2) and its width is (3x - 1). If a path of width x runs around the garden, find the total area.

M5. The area of a triangle is ½bh. If the base is (4x + 3) and height is (2x - 1), find the area.

M6. A box has dimensions (x + 2), (2x - 1), and (3x + 4). Find its volume.

M7. The cost of x items at £(3x + 2) each and y items at £(2x - 1) each. Find the total cost.

M8. A room's length is (4x + 3) and width is (3x - 2). If carpet costs £(x + 1) per square metre, find the total cost.

M9. The perimeter of a rectangle is 4(2x + 3) and its area is (3x - 1)(x + 2). Verify if these are consistent.

M10. A cylindrical tank has radius (2x + 1) and height (3x - 2). Using $\pi r^2 h$, find the volume in terms of π.